

10/563166

29 DEC 2005

SEQUENCE LISTING

<110> Hidai, Chiaki

<120> Protein Capable of Deposition onto Extracellular Matrix

<130> 11711-001-999 (P03-0057PCT)

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<150> JP2003-188598

<151> 2003-06-30

<160> 26

<170> PatentIn version 3.2

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cgcagcagcg tgagccgtag tcactgctgg ccgcattcgcc tgcgtgcgcg cacggaaatc 300

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cgtccgttag aaggatc atg aag cac ttg gta gca gcc tgg ctt ttg gtt 651

Met Lys His Leu Val Ala Ala Trp Leu Leu Val

1 5 10

gga ctc agc ctc ggg gtg ccc cag ttc ggc aaa ggt gac att tgc aac 699

Gly Leu Ser Leu Gly Val Pro Gln Phe Gly Lys Gly Asp Ile Cys Asn

15 20 25

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| ccg aac ccc tgt gaa aat ggt ggc atc tgt ctg tca gga ctg gct gat Pro Asn Pro Cys Glu Asn Gly Gly Ile Cys Leu Ser Gly Leu Ala Asp | 747 |
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| tct agt gtt gtg gag gtt gca tca gat gaa gaa aag cct act tca gca Ser Ser Val Val Glu Val Ala Ser Asp Glu Glu Lys Pro Thr Ser Ala | 843 |
| 60 65 70 75 | |
| ggt ccc tgc atc cct aac cca tgc cat aac gga gga acc tgt gag ata Gly Pro Cys Ile Pro Asn Pro Cys His Asn Gly Thr Cys Glu Ile | 891 |
| 80 85 90 | |
| agc gaa gcc tat cga gga gac aca ttc ata ggc tat gtt tgt aaa tgt Ser Glu Ala Tyr Arg Gly Asp Thr Phe Ile Gly Tyr Val Cys Lys Cys | 939 |
| 95 100 105 | |
| cct cgg gga ttt aat ggg att cac tgt cag cac aat ata aat gaa tgt Pro Arg Gly Phe Asn Gly Ile His Cys Gln His Asn Ile Asn Glu Cys | 987 |
| 110 115 120 | |
| gaa gct gag cct tgc aga aat ggc gga ata tgt acc gac ctt gtt gct Glu Ala Glu Pro Cys Arg Asn Gly Ile Cys Thr Asp Leu Val Ala | 1035 |
| 125 130 135 | |
| aac tac tct tgt gaa tgc cca gga gaa ttt atg gga cga aat tgt caa Asn Tyr Ser Cys Glu Cys Pro Gly Glu Phe Met Gly Arg Asn Cys Gln | 1083 |
| 140 145 150 155 | |
| tat aaa tgc tct ggg cca ttg gga atc gaa ggt ggg atc ata tct aat Tyr Lys Cys Ser Gly Pro Leu Gly Ile Glu Gly Ile Ile Ser Asn | 1131 |
| 160 165 170 | |
| cag caa atc aca gct tca tct act cac cga gct ctt ttt gga ctc cgg Gln Gln Ile Thr Ala Ser Ser Thr His Arg Ala Leu Phe Gly Leu Arg | 1179 |
| 175 180 185 | |
| aag tgg tat ccc tac tat gct cga ctt aat aag aag ggc ctt ata aat Lys Trp Tyr Pro Tyr Tyr Ala Arg Leu Asn Lys Lys Gly Leu Ile Asn | 1227 |
| 190 195 200 | |
| gcc tgg aca gct gct gaa aat gac aga tgg cca tgg att cag ata aat Ala Trp Thr Ala Ala Glu Asn Asp Arg Trp Pro Trp Ile Gln Ile Asn | 1275 |
| 205 210 215 | |
| ttg caa aga aaa atg aga gtc act ggt gtt att acc caa gga gca aaa Leu Gln Arg Lys Met Arg Val Thr Gly Val Ile Thr Gln Gly Ala Lys | 1323 |
| 220 225 230 235 | |
| agg att gga agc cca gag tac ata aaa tcc tac aaa att gcc tac agc Arg Ile Gly Ser Pro Glu Tyr Ile Lys Ser Tyr Lys Ile Ala Tyr Ser | 1371 |
| 240 245 250 | |
| aat gac ggg aag acc tgg gca atg tac aaa gta aaa ggc acc aat gaa Asn Asp Gly Lys Thr Trp Ala Met Tyr Lys Val Lys Gly Thr Asn Glu | 1419 |
| 255 260 265 | |

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| gag atg gtc ttt cgt gga aat gtt gat aac aac aca cca tat gct aat Glu Met Val Phe Arg Gly Asn Val Asp Asn Asn Thr Pro Tyr Ala Asn 270 275 280 | 1467 |
| tct ttc aca ccc cca atc aaa gct cag tat gta aga ctc tac ccc caa Ser Phe Thr Pro Pro Ile Lys Ala Gln Tyr Val Arg Leu Tyr Pro Gln 285 290 295 | 1515 |
| att tgt cga agg cat tgt act tta aga atg gaa ctt ctt ggc tgt gag Ile Cys Arg Arg His Cys Thr Leu Arg Met Glu Leu Leu Gly Cys Glu 300 305 310 315 | 1563 |
| ctc tca ggc tgt tca gaa cct ttg ggg atg aaa tca ggg cat ata caa Leu Ser Gly Cys Ser Glu Pro Leu Gly Met Lys Ser Gly His Ile Gln 320 325 330 | 1611 |
| gac tac cag atc act gcc tcc agc gtc ttc aga aca ctc aac atg gac Asp Tyr Gln Ile Thr Ala Ser Ser Val Phe Arg Thr Leu Asn Met Asp 335 340 345 | 1659 |
| atg ttt act tgg gaa cca agg aaa gcc agg ctg gac aag caa ggc aaa Met Phe Thr Trp Glu Pro Arg Lys Ala Arg Leu Asp Lys Gln Gly Lys 350 355 360 | 1707 |
| gta aat gcc tgg act tcc ggc cat aac gac cag tca caa tgg tta cag Val Asn Ala Trp Thr Ser Gly His Asn Asp Gln Ser Gln Trp Leu Gln 365 370 375 | 1755 |
| gtt gat ctt ctt gtc cct act aag gtg aca ggc atc att aca caa gga Val Asp Leu Leu Val Pro Thr Lys Val Thr Gly Ile Ile Thr Gln Gly 380 385 390 395 | 1803 |
| gct aaa gat ttt ggt cac gtg cag ttt gtt ggg tca tac aaa cta gct Ala Lys Asp Phe Gly His Val Gln Phe Val Gly Ser Tyr Lys Leu Ala 400 405 410 | 1851 |
| tac agc aat gat gga gaa cac tgg atg gtg cac cag gat gaa aaa cag Tyr Ser Asn Asp Gly Glu His Trp Met Val His Gln Asp Glu Lys Gln 415 420 425 | 1899 |
| agg aaa gac aag gtt ttt caa ggc aat ttt gac aat gac act cac agg Arg Lys Asp Lys Val Phe Gln Gly Asn Phe Asp Asn Asp Thr His Arg 430 435 440 | 1947 |
| aaa aat gtc atc gac cct ccc atc tat gca cga ttc ata aga atc ctt Lys Asn Val Ile Asp Pro Pro Ile Tyr Ala Arg Phe Ile Arg Ile Leu 445 450 455 | 1995 |
| cct tgg tcc tgg tat gga agg atc act ctg cgg tca gag ctg ctg ggc Pro Trp Ser Trp Tyr Gly Arg Ile Thr Leu Arg Ser Glu Leu Leu Gly 460 465 470 475 | 2043 |
| tgc gca gag gag gaa tga agtgcggggc cgcacatccc acaatgctt Cys Ala Glu Glu Glu 480 | 2091 |
| tctttatTTT cctataagta tctccacgaa atgaactgtg tgaagctgat ggaaactgca | 2151 |
| tttGTTTTT tcaaagtgtt caaattatgg taggctactg actgtcttt taggagttct | 2211 |
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2303

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Asn Gly Gly Ile Cys Leu Ser Gly Leu Ala Asp Asp Ser Phe Ser Cys
35 40 45

Glu Cys Pro Glu Gly Phe Ala Gly Pro Asn Cys Ser Ser Val Val Glu
50 55 60

Val Ala Ser Asp Glu Glu Lys Pro Thr Ser Ala Gly Pro Cys Ile Pro
65 70 75 80

Asn Pro Cys His Asn Gly Gly Thr Cys Glu Ile Ser Glu Ala Tyr Arg
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Gly Asp Thr Phe Ile Gly Tyr Val Cys Lys Cys Pro Arg Gly Phe Asn
100 105 110

Gly Ile His Cys Gln His Asn Ile Asn Glu Cys Glu Ala Glu Pro Cys
115 120 125

Arg Asn Gly Gly Ile Cys Thr Asp Leu Val Ala Asn Tyr Ser Cys Glu
130 135 140

Cys Pro Gly Glu Phe Met Gly Arg Asn Cys Gln Tyr Lys Cys Ser Gly
145 150 155 160

Pro Leu Gly Ile Glu Gly Ile Ile Ser Asn Gln Gln Ile Thr Ala
165 170 175

Ser Ser Thr His Arg Ala Leu Phe Gly Leu Arg Lys Trp Tyr Pro Tyr
180 185 190

Tyr Ala Arg Leu Asn Lys Lys Gly Leu Ile Asn Ala Trp Thr Ala Ala

195

200

205

Glu Asn Asp Arg Trp Pro Trp Ile Gln Ile Asn Leu Gln Arg Lys Met
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Arg Val Thr Gly Val Ile Thr Gln Gly Ala Lys Arg Ile Gly Ser Pro
225 230 235 240

Glu Tyr Ile Lys Ser Tyr Lys Ile Ala Tyr Ser Asn Asp Gly Lys Thr
245 250 255

Trp Ala Met Tyr Lys Val Lys Gly Thr Asn Glu Glu Met Val Phe Arg
260 265 270

Gly Asn Val Asp Asn Asn Thr Pro Tyr Ala Asn Ser Phe Thr Pro Pro
275 280 285

Ile Lys Ala Gln Tyr Val Arg Leu Tyr Pro Gln Ile Cys Arg Arg His
290 295 300

Cys Thr Leu Arg Met Glu Leu Leu Gly Cys Glu Leu Ser Gly Cys Ser
305 310 315 320

Glu Pro Leu Gly Met Lys Ser Gly His Ile Gln Asp Tyr Gln Ile Thr
325 330 335

Ala Ser Ser Val Phe Arg Thr Leu Asn Met Asp Met Phe Thr Trp Glu
340 345 350

Pro Arg Lys Ala Arg Leu Asp Lys Gln Gly Lys Val Asn Ala Trp Thr
355 360 365

Ser Gly His Asn Asp Gln Ser Gln Trp Leu Gln Val Asp Leu Leu Val
370 375 380

Pro Thr Lys Val Thr Gly Ile Ile Thr Gln Gly Ala Lys Asp Phe Gly
385 390 395 400

His Val Gln Phe Val Gly Ser Tyr Lys Leu Ala Tyr Ser Asn Asp Gly
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Glu His Trp Met Val His Gln Asp Glu Lys Gln Arg Lys Asp Lys Val
420 425 430

Phe Gln Gly Asn Phe Asp Asn Asp Thr His Arg Lys Asn Val Ile Asp

435

440

445

Pro Pro Ile Tyr Ala Arg Phe Ile Arg Ile Leu Pro Trp Ser Trp Tyr
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tac agc aat gac ggg aag acc tgg gca atg tac aaa gta aaa ggc acc
 Tyr Ser Asn Asp Gly Lys Thr Trp Ala Met Tyr Lys Val Lys Gly Thr
 35 40 45

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aat gaa gag atg gtc ttt cgt gga aat gtt gat aac aac aca cca tat
Asn Glu Glu Met Val Phe Arg Gly Asn Val Asp Asn Asn Thr Pro Tyr
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ccc caa att tgt cga agg cat tgt act tta aga atg gaa ctt ctt ggc
Pro Gln Ile Cys Arg Arg His Cys Thr Leu Arg Met Glu Leu Leu Gly
          85           90           95

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tgt gag ctc tca ggc tgt tca gaa cct ttg ggg atg aaa tca ggg cat
 Cys Glu Leu Ser Gly Cys Ser Glu Pro Leu Gly Met Lys Ser Gly His
 100 105 110

ata caa gac tac cag atc act gcc tcc agc gtc ttc aga aca ctc aac
Ile Gln Asp Tyr Gln Ile Thr Ala Ser Ser Val Phe Arg Thr Leu Asn
115 120 125

atg gac atg
Met Asp Met
120

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Tyr Ser Asn Asp Gly Lys Thr Trp Ala Met Tyr Lys Val Lys Gly Thr
35 40 45

Asn Glu Glu Met Val Phe Arg Gly Asn Val Asp Asn Asn Thr Pro Tyr
50 55 60

Ala Asn Ser Phe Thr Pro Pro Ile Lys Ala Gln Tyr Val Arg Leu Tyr
65 70 75 80

Pro Gln Ile Cys Arg Arg His Cys Thr Leu Arg Met Glu Leu Leu Gly
85 90 95

Cys Glu Leu Ser Gly Cys Ser Glu Pro Leu Gly Met Lys Ser Gly His
100 105 110

Ile Gln Asp Tyr Gln Ile Thr Ala Ser Ser Val Phe Arg Thr Leu Asn
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Met Asp Met
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gtg ccc cag ttc ggc aaa ggt gac att tgc aac ccg aac ccc tgt gaa
Val Pro Gln Phe Gly Lys Gly Asp Ile Cys Asn Pro Asn Pro Cys Glu
20 25 30 96

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| aat ggt ggc atc tgt ctg tca gga ctg gct gat gat tcc ttt tcc tgt | | 144 | |
| Asn Gly Gly Ile Cys Leu Ser Gly Leu Ala Asp Asp Ser Phe Ser Cys | | | |
| 35 | 40 | 45 | |
| gag tgt cca gaa ggc ttc gca ggt ccg aac tgc tct agt gtt gtg gag | | 192 | |
| Glu Cys Pro Glu Gly Phe Ala Gly Pro Asn Cys Ser Ser Val Val Glu | | | |
| 50 | 55 | 60 | |
| gtt gca tca gat gaa gaa aag cct act tca gca ggt ccc tgc atc cct | | 240 | |
| Val Ala Ser Asp Glu Glu Lys Pro Thr Ser Ala Gly Pro Cys Ile Pro | | | |
| 65 | 70 | 75 | 80 |
| aac cca tgc cat aac gga gga acc tgt gag ata agc gaa gcc tat cga | | 288 | |
| Asn Pro Cys His Asn Gly Gly Thr Cys Glu Ile Ser Glu Ala Tyr Arg | | | |
| 85 | 90 | 95 | |
| gga gac aca ttc ata ggc tat gtt tgt aaa tgt cct cgg gga ttt aat | | 336 | |
| Gly Asp Thr Phe Ile Gly Tyr Val Cys Lys Cys Pro Arg Gly Phe Asn | | | |
| 100 | 105 | 110 | |
| ggg att cac tgt cag cac aat ata aat gaa tgt gaa gct gag cct tgc | | 384 | |
| Gly Ile His Cys Gln His Asn Ile Asn Glu Cys Glu Ala Glu Pro Cys | | | |
| 115 | 120 | 125 | |
| aga aat ggc gga ata tgt acc gac ctt gtt gct aac tac tct tgt gaa | | 432 | |
| Arg Asn Gly Gly Ile Cys Thr Asp Leu Val Ala Asn Tyr Ser Cys Glu | | | |
| 130 | 135 | 140 | |
| tgc cca gga gaa ttt atg gga cga aat tgt caa tat aaa tgc tct ggg | | 480 | |
| Cys Pro Gly Glu Phe Met Gly Arg Asn Cys Gln Tyr Lys Cys Ser Gly | | | |
| 145 | 150 | 155 | 160 |
| cca ttg gga atc gaa ggt ggg atc ata tct aat cag caa atc aca gct | | 528 | |
| Pro Leu Gly Ile Glu Gly Ile Ile Ser Asn Gln Gln Ile Thr Ala | | | |
| 165 | 170 | 175 | |
| tca tct act cac cga gct ctt ttt gga ctc cgg aag tgg tat ccc tac | | 576 | |
| Ser Ser Thr His Arg Ala Leu Phe Gly Leu Arg Lys Trp Tyr Pro Tyr | | | |
| 180 | 185 | 190 | |
| tat gct cga ctt aat aag aag ggc ctt ata aat gcc tgg aca gct gct | | 624 | |
| Tyr Ala Arg Leu Asn Lys Lys Gly Leu Ile Asn Ala Trp Thr Ala Ala | | | |
| 195 | 200 | 205 | |
| gaa aat gac aga tgg cca tgg att cag ata aat ttg caa aga aaa atg | | 672 | |
| Glu Asn Asp Arg Trp Pro Trp Ile Gln Ile Asn Leu Gln Arg Lys Met | | | |
| 210 | 215 | 220 | |
| aga gtc act ggt gtt att acc caa gga gca aaa agg att gga agc cca | | 720 | |
| Arg Val Thr Gly Val Ile Thr Gln Gly Ala Lys Arg Ile Gly Ser Pro | | | |
| 225 | 230 | 235 | 240 |
| gag tac ata aaa tcc tac aaa att gcc tac agc aat gac ggg aag acc | | 768 | |
| Glu Tyr Ile Lys Ser Tyr Lys Ile Ala Tyr Ser Asn Asp Gly Lys Thr | | | |
| 245 | 250 | 255 | |
| tgg gca atg tac aaa gta aaa ggc acc aat gaa gag atg gtc ttt cgt | | 816 | |
| Trp Ala Met Tyr Lys Val Lys Gly Thr Asn Glu Glu Met Val Phe Arg | | | |
| 260 | 265 | 270 | |
| gga aat gtt gat aac aac aca cca tat gct aat tct ttc aca ccc cca | | 864 | |

| | | | |
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| Gly Asn Val Asp Asn Asn Thr Pro Tyr Ala Asn Ser Phe Thr Pro Pro | | | |
| 275 | 280 | 285 | |
| atc aaa gct cag tat gta aga ctc tac ccc caa att tgt cga agg cat | | | 912 |
| Ile Lys Ala Gln Tyr Val Arg Leu Tyr Pro Gln Ile Cys Arg Arg His | | | |
| 290 | 295 | 300 | |
| tgt act tta aga atg gaa ctt ctt ggc tgt gag ctc tca ggc tgt tca | | | 960 |
| Cys Thr Leu Arg Met Glu Leu Leu Gly Cys Glu Leu Ser Gly Cys Ser | | | |
| 305 | 310 | 315 | 320 |
| gaa cct ttg ggg atg aaa tca ggg cat ata caa gac tac cag atc act | | | 1008 |
| Glu Pro Leu Gly Met Lys Ser Gly His Ile Gln Asp Tyr Gln Ile Thr | | | |
| 325 | 330 | 335 | |
| gcc tcc agc gtc ttc aga aca ctc aac atg gac atg | | | 1044 |
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| 340 | 345 | | |
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| | | | |
| Val Pro Gln Phe Gly Lys Gly Asp Ile Cys Asn Pro Asn Pro Cys Glu | | | |
| 20 | 25 | 30 | |
| | | | |
| Asn Gly Gly Ile Cys Leu Ser Gly Leu Ala Asp Asp Ser Phe Ser Cys | | | |
| 35 | 40 | 45 | |
| | | | |
| Glu Cys Pro Glu Gly Phe Ala Gly Pro Asn Cys Ser Ser Val Val Glu | | | |
| 50 . | 55 | 60 | |
| | | | |
| Val Ala Ser Asp Glu Glu Lys Pro Thr Ser Ala Gly Pro Cys Ile Pro | | | |
| 65 | 70 | 75 | 80 |
| | | | |
| Asn Pro Cys His Asn Gly Gly Thr Cys Glu Ile Ser Glu Ala Tyr Arg | | | |
| 85 | 90 | 95 | |
| | | | |
| Gly Asp Thr Phe Ile Gly Tyr Val Cys Lys Cys Pro Arg Gly Phe Asn | | | |
| 100 | 105 | 110 | |
| | | | |
| Gly Ile His Cys Gln His Asn Ile Asn Glu Cys Glu Ala Glu Pro Cys | | | |
| 115 | 120 | 125 | |
| | | | |
| Arg Asn Gly Gly Ile Cys Thr Asp Leu Val Ala Asn Tyr Ser Cys Glu | | | |
| 130 | 135 | 140 | |

Cys Pro Gly Glu Phe Met Gly Arg Asn Cys Gln Tyr Lys Cys Ser Gly
145 150 155 160

Pro Leu Gly Ile Glu Gly Gly Ile Ile Ser Asn Gln Gln Ile Thr Ala
165 170 175

Ser Ser Thr His Arg Ala Leu Phe Gly Leu Arg Lys Trp Tyr Pro Tyr
180 185 190

Tyr Ala Arg Leu Asn Lys Lys Gly Leu Ile Asn Ala Trp Thr Ala Ala
195 200 205

Glu Asn Asp Arg Trp Pro Trp Ile Gln Ile Asn Leu Gln Arg Lys Met
210 215 220

Arg Val Thr Gly Val Ile Thr Gln Gly Ala Lys Arg Ile Gly Ser Pro
225 230 235 240

Glu Tyr Ile Lys Ser Tyr Lys Ile Ala Tyr Ser Asn Asp Gly Lys Thr
245 250 255

Trp Ala Met Tyr Lys Val Lys Gly Thr Asn Glu Glu Met Val Phe Arg
260 265 270

Gly Asn Val Asp Asn Asn Thr Pro Tyr Ala Asn Ser Phe Thr Pro Pro
275 280 285

Ile Lys Ala Gln Tyr Val Arg Leu Tyr Pro Gln Ile Cys Arg Arg His
290 295 300

Cys Thr Leu Arg Met Glu Leu Leu Gly Cys Glu Leu Ser Gly Cys Ser
305 310 315 320

Glu Pro Leu Gly Met Lys Ser Gly His Ile Gln Asp Tyr Gln Ile Thr
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Ala Ser Ser Val Phe Arg Thr Leu Asn Met Asp Met
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| Met Lys His Leu Val Ala Ala Trp Leu Leu Val Gly Leu Ser Leu Gly | | | |
| 1 | 5 | 10 | 15 |
| gtg ccc cag ttc ggc aaa ggt gac att tgc aac ccg aac ccc tgt gaa | | | 96 |
| Val Pro Gln Phe Gly Lys Gly Asp Ile Cys Asn Pro Asn Pro Cys Glu | | | |
| 20 | 25 | 30 | |
| aat ggt ggc atc tgt ctg tca gga ctg gct gat gat tcc ttt tcc tgt | | | 144 |
| Asn Gly Gly Ile Cys Leu Ser Gly Leu Ala Asp Asp Ser Phe Ser Cys | | | |
| 35 | 40 | 45 | |
| gag tgt cca gaa ggc ttc gca ggt ccg aac tgc tct agt gtt gtg gag | | | 192 |
| Glu Cys Pro Glu Gly Phe Ala Gly Pro Asn Cys Ser Ser Val Val Glu | | | |
| 50 | 55 | 60 | |
| gtt gca tca gat gaa gaa aag cct act tca gca ggt ccc tgc atc cct | | | 240 |
| Val Ala Ser Asp Glu Glu Lys Pro Thr Ser Ala Gly Pro Cys Ile Pro | | | |
| 65 | 70 | 75 | 80 |
| aac cca tgc cat aac gga gga acc tgt gag ata agc gaa gcc tat cga | | | 288 |
| Asn Pro Cys His Asn Gly Gly Thr Cys Glu Ile Ser Glu Ala Tyr Arg | | | |
| 85 | 90 | 95 | |
| gga gac aca ttc ata ggc tat gtt tgt aaa tgt cct cgg gga ttt aat | | | 336 |
| Gly Asp Thr Phe Ile Gly Tyr Val Cys Lys Cys Pro Arg Gly Phe Asn | | | |
| 100 | 105 | 110 | |
| ggg att cac tgt cag cac aat ata aat gaa tgt gaa gct gag cct tgc | | | 384 |
| Gly Ile His Cys Gln His Asn Ile Asn Glu Cys Glu Ala Glu Pro Cys | | | |
| 115 | 120 | 125 | |
| aga aat ggc gga ata tgt acc gac ctt gtt gct aac tac tct tgt gaa | | | 432 |
| Arg Asn Gly Gly Ile Cys Thr Asp Leu Val Ala Asn Tyr Ser Cys Glu | | | |
| 130 | 135 | 140 | |
| tgc cca gga gaa ttt atg gga cga aat tgt caa tat aaa tgc tct ggg | | | 480 |
| Cys Pro Gly Glu Phe Met Gly Arg Asn Cys Gln Tyr Lys Cys Ser Gly | | | |
| 145 | 150 | 155 | 160 |
| cca ttg gga atc gaa ggt ggg atc ata tct aat cag caa atc aca gct | | | 528 |
| Pro Leu Gly Ile Glu Gly Ile Ile Ser Asn Gln Gln Ile Thr Ala | | | |
| 165 | 170 | 175 | |
| tca tct act cac cga gct ctt ttt gga ctc ccg aag tgg tat ccc tac | | | 576 |
| Ser Ser Thr His Arg Ala Leu Phe Gly Leu Arg Lys Trp Tyr Pro Tyr | | | |
| 180 | 185 | 190 | |
| tat gct cga ctt aat aag aag ggc ctt ata aat gcc tgg aca gct gct | | | 624 |
| Tyr Ala Arg Leu Asn Lys Lys Gly Leu Ile Asn Ala Trp Thr Ala Ala | | | |
| 195 | 200 | 205 | |
| gaa aat gac aga tgg cca tgg att cag ata aat ttg caa aga aaa atg | | | 672 |
| Glu Asn Asp Arg Trp Pro Trp Ile Gln Ile Asn Leu Gln Arg Lys Met | | | |
| 210 | 215 | 220 | |

aga gtc act ggt gtt att acc caa gga gca aaa agg att gga agc cca 720
 Arg Val Thr Gly Val Ile Thr Gln Gly Ala Lys Arg Ile Gly Ser Pro
 225 230 235 240

gag tac ata aaa tcc tac aaa att gcc tac agc aat gac ggg aag acc 768
 Glu Tyr Ile Lys Ser Tyr Lys Ile Ala Tyr Ser Asn Asp Gly Lys Thr
 245 250 255

tgg gca atg tac aaa gta aaa ggc acc aat gaa gag atg gtc ttt cgt 816
 Trp Ala Met Tyr Lys Val Lys Gly Thr Asn Glu Glu Met Val Phe Arg
 260 265 270

gga aat gtt gat aac aac aca cca tat gct aat tct ttc aca ccc cca 864
 Gly Asn Val Asp Asn Asn Thr Pro Tyr Ala Asn Ser Phe Thr Pro Pro
 275 280 285

atc aaa gct cag tat gta aga ctc tac ccc caa att tgt cga agg cat 912
 Ile Lys Ala Gln Tyr Val Arg Leu Tyr Pro Gln Ile Cys Arg Arg His
 290 295 300

tgt act tta aga atg gaa ctt ctt ggc tgt gag ctc tca ggc tgt tca 960
 Cys Thr Leu Arg Met Glu Leu Leu Gly Cys Glu Leu Ser Gly Cys Ser
 305 310 315 320

gaa cct ttg ggg atg aaa tca ggg cat ata caa gac tac cag atc act 1008
 Glu Pro Leu Gly Met Lys Ser Gly His Ile Gln Asp Tyr Gln Ile Thr
 325 330 335

gcc tcc agc gtc ttc aga aca ctc aac atg gac atg ttt act tgg gaa 1056
 Ala Ser Ser Val Phe Arg Thr Leu Asn Met Asp Met Phe Thr Trp Glu
 340 345 350

cca agg aaa gcc agg ctg gac aag caa ggc aaa gta aat 1095
 Pro Arg Lys Ala Arg Leu Asp Lys Gln Gly Lys Val Asn
 355 360 365

<210> 8
 <211> 365
 <212> PRT
 <213> Mus musculus

<400> 8

Met Lys His Leu Val Ala Ala Trp Leu Leu Val Gly Leu Ser Leu Gly
 1 5 10 15

Val Pro Gln Phe Gly Lys Gly Asp Ile Cys Asn Pro Asn Pro Cys Glu
 20 25 30

Asn Gly Gly Ile Cys Leu Ser Gly Leu Ala Asp Asp Ser Phe Ser Cys
 35 40 45

Glu Cys Pro Glu Gly Phe Ala Gly Pro Asn Cys Ser Ser Val Val Glu
 50 55 60

Val Ala Ser Asp Glu Glu Lys Pro Thr Ser Ala Gly Pro Cys Ile Pro

65

70

75

80

Asn Pro Cys His Asn Gly Gly Thr Cys Glu Ile Ser Glu Ala Tyr Arg
85 90 95

Gly Asp Thr Phe Ile Gly Tyr Val Cys Lys Cys Pro Arg Gly Phe Asn
100 105 110

Gly Ile His Cys Gln His Asn Ile Asn Glu Cys Glu Ala Glu Pro Cys
115 120 125

Arg Asn Gly Gly Ile Cys Thr Asp Leu Val Ala Asn Tyr Ser Cys Glu
130 135 140

Cys Pro Gly Glu Phe Met Gly Arg Asn Cys Gln Tyr Lys Cys Ser Gly
145 150 155 160

Pro Leu Gly Ile Glu Gly Ile Ile Ser Asn Gln Gln Ile Thr Ala
165 170 175

Ser Ser Thr His Arg Ala Leu Phe Gly Leu Arg Lys Trp Tyr Pro Tyr
180 185 190

Tyr Ala Arg Leu Asn Lys Lys Gly Leu Ile Asn Ala Trp Thr Ala Ala
195 200 205

Glu Asn Asp Arg Trp Pro Trp Ile Gln Ile Asn Leu Gln Arg Lys Met
210 215 220

Arg Val Thr Gly Val Ile Thr Gln Gly Ala Lys Arg Ile Gly Ser Pro
225 230 235 240

Glu Tyr Ile Lys Ser Tyr Lys Ile Ala Tyr Ser Asn Asp Gly Lys Thr
245 250 255

Trp Ala Met Tyr Lys Val Lys Gly Thr Asn Glu Glu Met Val Phe Arg
260 265 270

Gly Asn Val Asp Asn Asn Thr Pro Tyr Ala Asn Ser Phe Thr Pro Pro
275 280 285

Ile Lys Ala Gln Tyr Val Arg Leu Tyr Pro Gln Ile Cys Arg Arg His
290 295 300

Cys Thr Leu Arg Met Glu Leu Leu Gly Cys Glu Leu Ser Gly Cys Ser

| | 305 | 310 | 315 | 320 |
|---|-----|-----|-----|-----|
| Glu Pro Leu Gly Met Lys Ser Gly His Ile Gln Asp Tyr Gln Ile Thr | | | | |
| 325 | | 330 | | 335 |
| Ala Ser Ser Val Phe Arg Thr Leu Asn Met Asp Met Phe Thr Trp Glu | | | | |
| 340 | | 345 | | 350 |
| Pro Arg Lys Ala Arg Leu Asp Lys Gln Gly Lys Val Asn | | | | |
| 355 | | 360 | | 365 |
| <210> 9 | | | | |
| <211> 1104 | | | | |
| <212> DNA | | | | |
| <213> Mus musculus | | | | |
| <220> | | | | |
| <221> CDS | | | | |
| <222> (1)..(1104) | | | | |
| <400> 9 | | | | |
| atg aag cac ttg gta gca gcc tgg ctt ttg gtt gga ctc agc ctc ggg | | | | 48 |
| Met Lys His Leu Val Ala Ala Trp Leu Leu Val Gly Leu Ser Leu Gly | | | | |
| 1 5 10 15 | | | | |
| gtg ccc cag ttc ggc aaa ggt gac att tgc aac ccg aac ccc tgt gaa | | | | 96 |
| Val Pro Gln Phe Gly Lys Gly Asp Ile Cys Asn Pro Asn Pro Cys Glu | | | | |
| 20 25 30 | | | | |
| aat ggt ggc atc tgt ctg tca gga ctg gct gat gat tcc ttt tcc tgt | | | | 144 |
| Asn Gly Gly Ile Cys Leu Ser Gly Leu Ala Asp Asp Ser Phe Ser Cys | | | | |
| 35 40 45 | | | | |
| gag tgt cca gaa ggc ttc gca ggt ccg aac tgc tct agt gtt gtg gag | | | | 192 |
| Glu Cys Pro Glu Gly Phe Ala Gly Pro Asn Cys Ser Ser Val Val Glu | | | | |
| 50 55 60 | | | | |
| gtt gca tca gat gaa gaa aag cct act tca gca ggt ccc tgc atc cct | | | | 240 |
| Val Ala Ser Asp Glu Lys Pro Thr Ser Ala Gly Pro Cys Ile Pro | | | | |
| 65 70 75 80 | | | | |
| aac cca tgc cat aac gga gga acc tgt gag ata agc gaa gcc tat cga | | | | 288 |
| Asn Pro Cys His Asn Gly Gly Thr Cys Glu Ile Ser Glu Ala Tyr Arg | | | | |
| 85 90 95 | | | | |
| gga gac aca ttc ata ggc tat gtt tgt aaa tgt cct cgg gga ttt aat | | | | 336 |
| Gly Asp Thr Phe Ile Gly Tyr Val Cys Lys Cys Pro Arg Gly Phe Asn | | | | |
| 100 105 110 | | | | |
| ggg att cac tgt cag cac aat ata aat gaa tgt gaa gct gag cct tgc | | | | 384 |
| Gly Ile His Cys Gln His Asn Ile Asn Glu Cys Glu Ala Glu Pro Cys | | | | |
| 115 120 125 | | | | |
| aga aat ggc gga ata tgt acc gac ctt gtt gct aac tac tct tgt gaa | | | | |
| Arg Asn Gly Gly Ile Cys Thr Asp Leu Val Ala Asn Tyr Ser Cys Glu | | | | |
| 130 135 140 | | | | |

| | |
|---|------|
| tgc cca gga gaa ttt atg gga cga aat tgt caa tat aaa tgc tct ggg Cys Pro Gly Glu Phe Met Gly Arg Asn Cys Gln Tyr Lys Cys Ser Gly 145 150 155 160 | 480 |
| cca ttg gga atc gaa ggt ggg atc ata tct aat cag caa atc aca gct Pro Leu Gly Ile Glu Gly Ile Ser Asn Gln Gln Ile Thr Ala 165 170 175 | 528 |
| tca tct act cac cga gct ctt ttt gga ctc cg ^g aag tgg tat ccc tac Ser Ser Thr His Arg Ala Leu Phe Gly Leu Arg Lys Trp Tyr Pro Tyr 180 185 190 | 576 |
| tat gct cga ctt aat aag aag ggc ctt ata aat gcc tgg aca gct gct Tyr Ala Arg Leu Asn Lys Lys Gly Leu Ile Asn Ala Trp Thr Ala Ala 195 200 205 | 624 |
| gaa aat gac aga tgg cca tgg att cag ata aat ttg caa aga aaa atg Glu Asn Asp Arg Trp Pro Trp Ile Gln Ile Asn Leu Gln Arg Lys Met 210 215 220 | 672 |
| aga gtc act ggt gtt att acc caa gga gca aaa agg att gga agc cca Arg Val Thr Gly Val Ile Thr Gln Gly Ala Lys Arg Ile Gly Ser Pro 225 230 235 240 | 720 |
| gag tac ata aaa tcc tac aaa att gcc tac agc aat gac ggg aag acc Glu Tyr Ile Lys Ser Tyr Lys Ile Ala Tyr Ser Asn Asp Gly Lys Thr 245 250 255 | 768 |
| tgg gca atg tac aaa gta aaa ggc acc aat gaa gag atg gtc ttt cgt Trp Ala Met Tyr Lys Val Lys Gly Thr Asn Glu Glu Met Val Phe Arg 260 265 270 | 816 |
| gga aat gtt gat aac aac aca cca tat gct aat tct ttc aca ccc cca Gly Asn Val Asp Asn Asn Thr Pro Tyr Ala Asn Ser Phe Thr Pro Pro 275 280 285 | 864 |
| atc aaa gct cag tat gta aga ctc tac ccc caa att tgt cga agg cat Ile Lys Ala Gln Tyr Val Arg Leu Tyr Pro Gln Ile Cys Arg Arg His 290 295 300 | 912 |
| tgt act tta aga atg gaa ctt ctt ggc tgt gag ctc tca ggc tgt tca Cys Thr Leu Arg Met Glu Leu Leu Gly Cys Glu Leu Ser Gly Cys Ser 305 310 315 320 | 960 |
| gaa cct ttg ggg atg aaa tca ggg cat ata caa gac tac cag atc act Glu Pro Leu Gly Met Lys Ser Gly His Ile Gln Asp Tyr Gln Ile Thr 325 330 335 | 1008 |
| gcc tcc agc gtc ttc aga aca ctc aac atg gac atg ttt act tgg gaa Ala Ser Ser Val Phe Arg Thr Leu Asn Met Asp Met Phe Thr Trp Glu 340 345 350 | 1056 |
| cca agg aaa gcc agg ctg gac aag caa ggc aaa gta aat gcc tgg act Pro Arg Lys Ala Arg Leu Asp Lys Gln Gly Lys Val Asn Ala Trp Thr 355 360 365 | 1104 |

<210> 10
<211> 368
<212> PRT

<213> Mus musculus

<400> 10

Met Lys His Leu Val Ala Ala Trp Leu Leu Val Gly Leu Ser Leu Gly
1 5 10 15

Val Pro Gln Phe Gly Lys Gly Asp Ile Cys Asn Pro Asn Pro Cys Glu
20 25 30

Asn Gly Gly Ile Cys Leu Ser Gly Leu Ala Asp Asp Ser Phe Ser Cys
35 40 45

Glu Cys Pro Glu Gly Phe Ala Gly Pro Asn Cys Ser Ser Val Val Glu
50 55 60

Val Ala Ser Asp Glu Glu Lys Pro Thr Ser Ala Gly Pro Cys Ile Pro
65 70 75 80

Asn Pro Cys His Asn Gly Gly Thr Cys Glu Ile Ser Glu Ala Tyr Arg
85 90 95

Gly Asp Thr Phe Ile Gly Tyr Val Cys Lys Cys Pro Arg Gly Phe Asn
100 105 110

Gly Ile His Cys Gln His Asn Ile Asn Glu Cys Glu Ala Glu Pro Cys
115 120 125

Arg Asn Gly Gly Ile Cys Thr Asp Leu Val Ala Asn Tyr Ser Cys Glu
130 135 140

Cys Pro Gly Glu Phe Met Gly Arg Asn Cys Gln Tyr Lys Cys Ser Gly
145 150 155 160

Pro Leu Gly Ile Glu Gly Ile Ile Ser Asn Gln Gln Ile Thr Ala
165 170 175

Ser Ser Thr His Arg Ala Leu Phe Gly Leu Arg Lys Trp Tyr Pro Tyr
180 185 190

Tyr Ala Arg Leu Asn Lys Lys Gly Leu Ile Asn Ala Trp Thr Ala Ala
195 200 205

Glu Asn Asp Arg Trp Pro Trp Ile Gln Ile Asn Leu Gln Arg Lys Met
210 215 220

Arg Val Thr Gly Val Ile Thr Gln Gly Ala Lys Arg Ile Gly Ser Pro

| | | | |
|---|-----|-----|-----|
| 225 | 230 | 235 | 240 |
| Glu Tyr Ile Lys Ser Tyr Lys Ile Ala Tyr Ser Asn Asp Gly Lys Thr | | | |
| 245 | | 250 | 255 |
| Trp Ala Met Tyr Lys Val Lys Gly Thr Asn Glu Glu Met Val Phe Arg | | | |
| 260 | | 265 | 270 |
| Gly Asn Val Asp Asn Asn Thr Pro Tyr Ala Asn Ser Phe Thr Pro Pro | | | |
| 275 | | 280 | 285 |
| Ile Lys Ala Gln Tyr Val Arg Leu Tyr Pro Gln Ile Cys Arg Arg His | | | |
| 290 | | 295 | 300 |
| Cys Thr Leu Arg Met Glu Leu Leu Gly Cys Glu Leu Ser Gly Cys Ser | | | |
| 305 | | 310 | 315 |
| Glu Pro Leu Gly Met Lys Ser Gly His Ile Gln Asp Tyr Gln Ile Thr | | | |
| 325 | | 330 | 335 |
| Ala Ser Ser Val Phe Arg Thr Leu Asn Met Asp Met Phe Thr Trp Glu | | | |
| 340 | | 345 | 350 |
| Pro Arg Lys Ala Arg Leu Asp Lys Gln Gly Lys Val Asn Ala Trp Thr | | | |
| 355 | | 360 | 365 |
| <210> 11 | | | |
| <211> 1155 | | | |
| <212> DNA | | | |
| <213> Mus musculus | | | |
| <220> | | | |
| <221> CDS | | | |
| <222> (1)..(1155) | | | |
| <400> 11 | | | |
| atg aag cac ttg gta gca gcc tgg ctt ttg gtt gga ctc agc ctc ggg 48 | | | |
| Met Lys His Leu Val Ala Ala Trp Leu Leu Val Gly Leu Ser Leu Gly | | | |
| 1 | 5 | 10 | 15 |
| gtg ccc cag ttc ggc aaa ggt gac att tgc aac ccg aac ccc tgt gaa 96 | | | |
| Val Pro Gln Phe Gly Lys Gly Asp Ile Cys Asn Pro Asn Pro Cys Glu | | | |
| 20 | 25 | 30 | |
| aat ggt ggc atc tgt ctg tca gga ctg gct gat gat tcc ttt tcc tgt 144 | | | |
| Asn Gly Gly Ile Cys Leu Ser Gly Leu Ala Asp Asp Ser Phe Ser Cys | | | |
| 35 | 40 | 45 | |
| gag tgt cca gaa ggc ttc gca ggt ccg aac tgc tct agt gtt gtg gag 192 | | | |
| Glu Cys Pro Glu Gly Phe Ala Gly Pro Asn Cys Ser Ser Val Val Glu | | | |

| 50 | 55 | 60 | |
|---|----|----|-----|
| gtt gca tca gat gaa gaa aag cct act tca gca ggt ccc tgc atc cct Val Ala Ser Asp Glu Glu Lys Pro Thr Ser Ala Gly Pro Cys Ile Pro 65 70 75 80 | | | 240 |
| aac cca tgc cat aac gga gga acc tgt gag ata agc gaa gcc tat cga Asn Pro Cys His Asn Gly Gly Thr Cys Glu Ile Ser Glu Ala Tyr Arg 85 90 95 | | | 288 |
| gga gac aca ttc ata ggc tat gtt tgt aaa tgt cct cgg gga ttt aat Gly Asp Thr Phe Ile Gly Tyr Val Cys Lys Cys Pro Arg Gly Phe Asn 100 105 110 | | | 336 |
| ggg att cac tgt cag cac aat ata aat gaa tgt gaa gct gag cct tgc Gly Ile His Cys Gln His Asn Ile Asn Glu Cys Glu Ala Glu Pro Cys 115 120 125 | | | 384 |
| aga aat ggc gga ata tgt acc gac ctt gtt gct aac tac tct tgt gaa Arg Asn Gly Gly Ile Cys Thr Asp Leu Val Ala Asn Tyr Ser Cys Glu 130 135 140 | | | 432 |
| tgc cca gga gaa ttt atg gga cga aat tgt caa tat aaa tgc tct ggg Cys Pro Gly Glu Phe Met Gly Arg Asn Cys Gln Tyr Lys Cys Ser Gly 145 150 155 160 | | | 480 |
| cca ttg gga atc gaa ggt ggg atc ata tct aat cag caa atc aca gct Pro Leu Gly Ile Glu Gly Ile Ile Ser Asn Gln Gln Ile Thr Ala 165 170 175 | | | 528 |
| tca tct act cac cga gct ctt ttt gga ctc cgg aag tgg tat ccc tac Ser Ser Thr His Arg Ala Leu Phe Gly Leu Arg Lys Trp Tyr Pro Tyr 180 185 190 | | | 576 |
| tat gct cga ctt aat aag aag ggc ctt ata aat gcc tgg aca gct gct Tyr Ala Arg Leu Asn Lys Lys Gly Leu Ile Asn Ala Trp Thr Ala Ala 195 200 205 | | | 624 |
| gaa aat gac aga tgg cca tgg att cag ata aat ttg caa aga aaa atg Glu Asn Asp Arg Trp Pro Trp Ile Gln Ile Asn Leu Gln Arg Lys Met 210 215 220 | | | 672 |
| aga gtc act ggt gtt att acc caa gga gca aaa agg att gga agc cca Arg Val Thr Gly Val Ile Thr Gln Gly Ala Lys Arg Ile Gly Ser Pro 225 230 235 240 | | | 720 |
| gag tac ata aaa tcc tac aaa att gcc tac agc aat gac ggg aag acc Glu Tyr Ile Lys Ser Tyr Lys Ile Ala Tyr Ser Asn Asp Gly Lys Thr 245 250 255 | | | 768 |
| tgg gca atg tac aaa gta aaa ggc acc aat gaa gag atg gtc ttt cgt Trp Ala Met Tyr Lys Val Lys Gly Thr Asn Glu Met Val Phe Arg 260 265 270 | | | 816 |
| gga aat gtt gat aac aac aca cca tat gct aat tct ttc aca ccc cca Gly Asn Val Asp Asn Asn Thr Pro Tyr Ala Asn Ser Phe Thr Pro Pro 275 280 285 | | | 864 |
| atc aaa gct cag tat gta aga ctc tac ccc caa att tgt cga agg cat Ile Lys Ala Gln Tyr Val Arg Leu Tyr Pro Gln Ile Cys Arg Arg His 290 295 300 | | | 912 |

tgt act tta aga atg gaa ctt ctt ggc tgt gag ctc tca ggc tgt tca 960
Cys Thr Leu Arg Met Glu Leu Leu Gly Cys Glu Leu Ser Gly Cys Ser
305 310 315 320

gaa cct ttg ggg atg aaa tca ggg cat ata caa gac tac cag atc act 1008
Glu Pro Leu Gly Met Lys Ser Gly His Ile Gln Asp Tyr Gln Ile Thr
325 330 335

gcc tcc agc gtc ttc aga aca ctc aac atg gac atg ttt act tgg gaa 1056
Ala Ser Ser Val Phe Arg Thr Leu Asn Met Asp Met Phe Thr Trp Glu
340 345 350

cca agg aaa gcc agg ctg gac aag caa ggc aaa gta aat gcc tgg act 1104
Pro Arg Lys Ala Arg Leu Asp Lys Gln Gly Lys Val Asn Ala Trp Thr
355 360 365

tcc ggc cat aac gac cag tca caa tgg tta cag gtt gat ctt ctt gtc 1152
Ser Gly His Asn Asp Gln Ser Gln Trp Leu Gln Val Asp Leu Leu Val
370 375 380

cct . 1155
Pro
385

<210> 12
<211> 385
<212> PRT
<213> Mus musculus

<400> 12

Met Lys His Leu Val Ala Ala Trp Leu Leu Val Gly Leu Ser Leu Gly
1 5 10 15

Val Pro Gln Phe Gly Lys Gly Asp Ile Cys Asn Pro Asn Pro Cys Glu
20 25 30

Asn Gly Gly Ile Cys Leu Ser Gly Leu Ala Asp Asp Ser Phe Ser Cys
35 40 45

Glu Cys Pro Glu Gly Phe Ala Gly Pro Asn Cys Ser Ser Val Val Glu
50 55 60

Val Ala Ser Asp Glu Glu Lys Pro Thr Ser Ala Gly Pro Cys Ile Pro
65 70 75 80

Asn Pro Cys His Asn Gly Gly Thr Cys Glu Ile Ser Glu Ala Tyr Arg
85 90 95

Gly Asp Thr Phe Ile Gly Tyr Val Cys Lys Cys Pro Arg Gly Phe Asn
100 105 110

Gly Ile His Cys Gln His Asn Ile Asn Glu Cys Glu Ala Glu Pro Cys
115 120 125

Arg Asn Gly Gly Ile Cys Thr Asp Leu Val Ala Asn Tyr Ser Cys Glu
130 135 140

Cys Pro Gly Glu Phe Met Gly Arg Asn Cys Gln Tyr Lys Cys Ser Gly
145 150 155 160

Pro Leu Gly Ile Glu Gly Ile Ile Ser Asn Gln Gln Ile Thr Ala
165 170 175

Ser Ser Thr His Arg Ala Leu Phe Gly Leu Arg Lys Trp Tyr Pro Tyr
180 185 190

Tyr Ala Arg Leu Asn Lys Lys Gly Leu Ile Asn Ala Trp Thr Ala Ala
195 200 205

Glu Asn Asp Arg Trp Pro Trp Ile Gln Ile Asn Leu Gln Arg Lys Met
210 215 220

Arg Val Thr Gly Val Ile Thr Gln Gly Ala Lys Arg Ile Gly Ser Pro
225 230 235 240

Glu Tyr Ile Lys Ser Tyr Lys Ile Ala Tyr Ser Asn Asp Gly Lys Thr
245 250 255

Trp Ala Met Tyr Lys Val Lys Gly Thr Asn Glu Glu Met Val Phe Arg
260 265 270

Gly Asn Val Asp Asn Asn Thr Pro Tyr Ala Asn Ser Phe Thr Pro Pro
275 280 285

Ile Lys Ala Gln Tyr Val Arg Leu Tyr Pro Gln Ile Cys Arg Arg His
290 295 300

Cys Thr Leu Arg Met Glu Leu Leu Gly Cys Glu Leu Ser Gly Cys Ser
305 310 315 320

Glu Pro Leu Gly Met Lys Ser Gly His Ile Gln Asp Tyr Gln Ile Thr
325 330 335

Ala Ser Ser Val Phe Arg Thr Leu Asn Met Asp Met Phe Thr Trp Glu
340 345 350

Pro Arg Lys Ala Arg Leu Asp Lys Gln Gly Lys Val Asn Ala Trp Thr
355 360 365

Ser Gly His Asn Asp Gln Ser Gln Trp Leu Gln Val Asp Leu Leu Val
370 375 380

Pro
385

<210> 13
<211> 789
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (1)..(789)

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| <400> 13 | | |
| ata aat ttg caa aga aaa atg aga gtc act ggt gtt att acc caa gga | | 48 |
| Ile Asn Leu Gln Arg Lys Met Arg Val Thr Gly Val Ile Thr Gln Gly | | |
| 1 5 10 15 | | |
| gca aaa agg att gga agc cca gag tac ata aaa tcc tac aaa att gcc | | 96 |
| Ala Lys Arg Ile Gly Ser Pro Glu Tyr Ile Lys Ser Tyr Lys Ile Ala | | |
| 20 25 30 | | |
| tac agc aat gac ggg aag acc tgg gca atg tac aaa gta aaa ggc acc | | 144 |
| Tyr Ser Asn Asp Gly Lys Thr Trp Ala Met Tyr Lys Val Lys Gly Thr | | |
| 35 40 45 | | |
| aat gaa gag atg gtc ttt cgt gga aat gtt gat aac aac aca cca tat | | 192 |
| Asn Glu Glu Met Val Phe Arg Gly Asn Val Asp Asn Asn Thr Pro Tyr | | |
| 50 55 60 | | |
| gct aat tct ttc aca ccc cca atc aaa gct cag tat gta aga ctc tac | | 240 |
| Ala Asn Ser Phe Thr Pro Pro Ile Lys Ala Gln Tyr Val Arg Leu Tyr | | |
| 65 70 75 80 | | |
| ccc caa att tgt cga agg cat tgt act tta aga atg gaa ctt ctt ggc | | 288 |
| Pro Gln Ile Cys Arg Arg His Cys Thr Leu Arg Met Glu Leu Leu Gly | | |
| 85 90 95 | | |
| tgt gag ctc tca ggc tgt tca gaa cct ttg ggg atg aaa tca ggg cat | | 336 |
| Cys Glu Leu Ser Gly Cys Ser Glu Pro Leu Gly Met Lys Ser Gly His | | |
| 100 105 110 | | |
| ata caa gac tac cag atc act gcc tcc agc gtc ttc aga aca ctc aac | | 384 |
| Ile Gln Asp Tyr Gln Ile Thr Ala Ser Ser Val Phe Arg Thr Leu Asn | | |
| 115 120 125 | | |
| atg gac atg ttt act tgg gaa cca agg aaa gcc agg ctg gac aag caa | | 432 |
| Met Asp Met Phe Thr Trp Glu Pro Arg Lys Ala Arg Leu Asp Lys Gln | | |
| 130 135 140 | | |

| | |
|--|-----|
| ggc aaa gta aat gcc tgg act tcc ggc cat aac gac cag tca caa tgg Gly Lys Val Asn Ala Trp Thr Ser Gly His Asn Asp Gln Ser Gln Trp | 480 |
| 145 150 155 160 | |
| tta cag gtt gat ctt ctt gtc cct act aag gtg aca ggc atc att aca Leu Gln Val Asp Leu Leu Val Pro Thr Lys Val Thr Gly Ile Ile Thr | 528 |
| 165 170 175 | |
| caa gga gct aaa gat ttt ggt cac gtg cag ttt gtt ggg tca tac aaa Gln Gly Ala Lys Asp Phe Gly His Val Gln Phe Val Gly Ser Tyr Lys | 576 |
| 180 185 190 | |
| cta gct tac agc aat gat gga gaa cac tgg atg gtg cac cag gat gaa Leu Ala Tyr Ser Asn Asp Gly Glu His Trp Met Val His Gln Asp Glu | 624 |
| 195 200 205 | |
| aaa cag agg aaa gac aag gtt ttt caa ggc aat ttt gac aat gac act Lys Gln Arg Lys Asp Lys Val Phe Gln Gly Asn Phe Asp Asn Asp Thr | 672 |
| 210 215 220 | |
| cac agg aaa aat gtc atc gac cct ccc atc tat gca cga ttc ata aga His Arg Lys Asn Val Ile Asp Pro Pro Ile Tyr Ala Arg Phe Ile Arg | 720 |
| 225 230 235 240 | |
| atc ctt cct tgg tcc tgg tat gga agg atc act ctg cgg tca gag ctg Ile Leu Pro Trp Ser Trp Tyr Gly Arg Ile Thr Leu Arg Ser Glu Leu | 768 |
| 245 250 255 | |
| ctg ggc tgc gca gag gag gaa Leu Gly Cys Ala Glu Glu Glu | 789 |
| 260 | |

<210> 14
<211> 263
<212> PRT
<213> Mus musculus

<400> 14

| | |
|---|--|
| Ile Asn Leu Gln Arg Lys Met Arg Val Thr Gly Val Ile Thr Gln Gly | |
| 1 5 10 15 | |

| | |
|---|--|
| Ala Lys Arg Ile Gly Ser Pro Glu Tyr Ile Lys Ser Tyr Lys Ile Ala | |
| 20 25 30 | |

| | |
|---|--|
| Tyr Ser Asn Asp Gly Lys Thr Trp Ala Met Tyr Lys Val Lys Gly Thr | |
| 35 40 45 | |

| | |
|---|--|
| Asn Glu Glu Met Val Phe Arg Gly Asn Val Asp Asn Asn Thr Pro Tyr | |
| 50 55 60 | |

| | |
|---|--|
| Ala Asn Ser Phe Thr Pro Pro Ile Lys Ala Gln Tyr Val Arg Leu Tyr | |
| 65 70 75 80 | |

Pro Gln Ile Cys Arg Arg His Cys Thr Leu Arg Met Glu Leu Leu Gly
85 90 95

Cys Glu Leu Ser Gly Cys Ser Glu Pro Leu Gly Met Lys Ser Gly His
100 105 110

Ile Gln Asp Tyr Gln Ile Thr Ala Ser Ser Val Phe Arg Thr Leu Asn
115 120 125

Met Asp Met Phe Thr Trp Glu Pro Arg Lys Ala Arg Leu Asp Lys Gln
130 135 140

Gly Lys Val Asn Ala Trp Thr Ser Gly His Asn Asp Gln Ser Gln Trp
145 150 155 160

Leu Gln Val Asp Leu Leu Val Pro Thr Lys Val Thr Gly Ile Ile Thr
165 170 175

Gln Gly Ala Lys Asp Phe Gly His Val Gln Phe Val Gly Ser Tyr Lys
180 185 190

Leu Ala Tyr Ser Asn Asp Gly Glu His Trp Met Val His Gln Asp Glu
195 200 205

Lys Gln Arg Lys Asp Lys Val Phe Gln Gly Asn Phe Asp Asn Asp Thr
210 215 220

His Arg Lys Asn Val Ile Asp Pro Pro Ile Tyr Ala Arg Phe Ile Arg
225 230 235 240

Ile Leu Pro Trp Ser Trp Tyr Gly Arg Ile Thr Leu Arg Ser Glu Leu
245 250 255

Leu Gly Cys Ala Glu Glu Glu
260

<210> 15
<211> 306
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (1)..(306)
<400> 15

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| ata aat ttg caa aga aaa atg aga gtc act ggt gtt att acc caa gga Ile Asn Leu Gln Arg Lys Met Arg Val Thr Gly Val Ile Thr Gln Gly | 48 |
| 1 5 10 15 | |
| gca aaa agg att gga agc cca gag tac ata aaa tcc tac aaa att gcc Ala Lys Arg Ile Gly Ser Pro Glu Tyr Ile Lys Ser Tyr Lys Ile Ala | 96 |
| 20 25 30 | |
| tac agc aat gac ggg aag acc tgg gca atg tac aaa gta aaa ggc acc Tyr Ser Asn Asp Gly Lys Thr Trp Ala Met Tyr Lys Val Lys Gly Thr | 144 |
| 35 40 45 | |
| aat gaa gag atg gtc ttt cgt gga aat gtt gat aac aac aca cca tat Asn Glu Glu Met Val Phe Arg Gly Asn Val Asp Asn Asn Thr Pro Tyr | 192 |
| 50 55 60 | |
| gct aat tct ttc aca ccc cca atc aaa gct cag tat gta aga ctc tac Ala Asn Ser Phe Thr Pro Pro Ile Lys Ala Gln Tyr Val Arg Leu Tyr | 240 |
| 65 70 75 80 | |
| ccc caa att tgt cga agg cat tgt act tta aga atg gaa ctt ctt ggc Pro Gln Ile Cys Arg Arg His Cys Thr Leu Arg Met Glu Leu Leu Gly | 288 |
| 85 90 95 | |
| tgt gag ctc tca ggc tgt Cys Glu Leu Ser Gly Cys | 306 |
| 100 | |

<210> 16
<211> 102
<212> PRT
<213> Mus musculus

<400> 16

| | |
|---|--|
| Ile Asn Leu Gln Arg Lys Met Arg Val Thr Gly Val Ile Thr Gln Gly | |
| 1 5 10 15 | |

| | |
|---|--|
| Ala Lys Arg Ile Gly Ser Pro Glu Tyr Ile Lys Ser Tyr Lys Ile Ala | |
| 20 25 30 | |

| | |
|---|--|
| Tyr Ser Asn Asp Gly Lys Thr Trp Ala Met Tyr Lys Val Lys Gly Thr | |
| 35 40 45 | |

| | |
|---|--|
| Asn Glu Glu Met Val Phe Arg Gly Asn Val Asp Asn Asn Thr Pro Tyr | |
| 50 55 60 | |

| | |
|---|--|
| Ala Asn Ser Phe Thr Pro Pro Ile Lys Ala Gln Tyr Val Arg Leu Tyr | |
| 65 70 75 80 | |

| | |
|---|--|
| Pro Gln Ile Cys Arg Arg His Cys Thr Leu Arg Met Glu Leu Leu Gly | |
| 85 90 95 | |

Cys Glu Leu Ser Gly Cys
100

<210> 17
<211> 678
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (1)..(678)

<400> 17
tgt gaa gct gag cct tgc aga aat ggc gga ata tgt acc gac ctt gtt 48
Cys Glu Ala Glu Pro Cys Arg Asn Gly Gly Ile Cys Thr Asp Leu Val
1 5 10 15

gct aac tac tct tgt gaa tgc cca gga gaa ttt atg gga cga aat tgt 96
Ala Asn Tyr Ser Cys Glu Cys Pro Gly Glu Phe Met Gly Arg Asn Cys
20 25 30

caa tat aaa tgc tct ggg cca ttg gga atc gaa ggt ggg atc ata tct 144
Gln Tyr Lys Cys Ser Gly Pro Leu Gly Ile Glu Gly Ile Ile Ser
35 40 45

aat cag caa atc aca gct tca tct act cac cga gct ctt ttt gga ctc 192
Asn Gln Gln Ile Thr Ala Ser Ser Thr His Arg Ala Leu Phe Gly Leu
50 55 60

cg^g aag tgg tat ccc tac tat gct cga ctt aat aag aag ggc ctt ata 240
Arg Lys Trp Tyr Pro Tyr Ala Arg Leu Asn Lys Lys Gly Leu Ile
65 70 75 80

aat gcc tgg aca gct gct gaa aat gac aga tgg cca tgg att cag ata 288
Asn Ala Trp Thr Ala Ala Glu Asn Asp Arg Trp Pro Trp Ile Gln Ile
85 90 95

aat ttg caa aga aaa atg aga gtc act ggt gtt att acc caa gga gca 336
Asn Leu Gln Arg Lys Met Arg Val Thr Gly Val Ile Thr Gln Gly Ala
100 105 110

aaa agg att gga agc cca gag tac ata aaa tcc tac aaa att gcc tac 384
Lys Arg Ile Gly Ser Pro Glu Tyr Ile Lys Ser Tyr Lys Ile Ala Tyr
115 120 125

agc aat gac ggg aag acc tgg gca atg tac aaa gta aaa ggc acc aat 432
Ser Asn Asp Gly Lys Thr Trp Ala Met Tyr Lys Val Lys Gly Thr Asn
130 135 140

gaa gag atg gtc ttt cgt gga aat gtt gat aac aac aca cca tat gct 480
Glu Glu Met Val Phe Arg Gly Asn Val Asp Asn Asn Thr Pro Tyr Ala
145 150 155 160

aat tct ttc aca ccc cca atc aaa gct cag tat gta aga ctc tac ccc 528
Asn Ser Phe Thr Pro Pro Ile Lys Ala Gln Tyr Val Arg Leu Tyr Pro
165 170 175

| | | | |
|---|-----|-----|----|
| caa att tgt cga agg cat tgt act tta aga atg gaa ctt ctt ggc tgt | | 576 | |
| Gln Ile Cys Arg Arg His Cys Thr Leu Arg Met Glu Leu Leu Gly Cys | | | |
| 180 | 185 | 190 | |
| gag ctc tca ggc tgt tca gaa cct ttg ggg atg aaa tca ggg cat ata | | 624 | |
| Glu Leu Ser Gly Cys Ser Glu Pro Leu Gly Met Lys Ser Gly His Ile | | | |
| 195 | 200 | 205 | |
| caa gac tac cag atc act gcc tcc agc gtc ttc aga aca ctc aac atg | | 672 | |
| Gln Asp Tyr Gln Ile Thr Ala Ser Ser Val Phe Arg Thr Leu Asn Met | | | |
| 210 | 215 | 220 | |
| gac atg | | 678 | |
| Asp Met | | | |
| 225 | | | |
| <210> 18 | | | |
| <211> 226 | | | |
| <212> PRT | | | |
| <213> Mus musculus | | | |
| <400> 18 | | | |
| Cys Glu Ala Glu Pro Cys Arg Asn Gly Gly Ile Cys Thr Asp Leu Val | | | |
| 1 | 5 | 10 | 15 |
| Ala Asn Tyr Ser Cys Glu Cys Pro Gly Glu Phe Met Gly Arg Asn Cys | | | |
| 20 | 25 | 30 | |
| Gln Tyr Lys Cys Ser Gly Pro Leu Gly Ile Glu Gly Gly Ile Ile Ser | | | |
| 35 | 40 | 45 | |
| Asn Gln Gln Ile Thr Ala Ser Ser Thr His Arg Ala Leu Phe Gly Leu | | | |
| 50 | 55 | 60 | |
| Arg Lys Trp Tyr Pro Tyr Tyr Ala Arg Leu Asn Lys Lys Gly Leu Ile | | | |
| 65 | 70 | 75 | 80 |
| Asn Ala Trp Thr Ala Ala Glu Asn Asp Arg Trp Pro Trp Ile Gln Ile | | | |
| 85 | 90 | 95 | |
| Asn Leu Gln Arg Lys Met Arg Val Thr Gly Val Ile Thr Gln Gly Ala | | | |
| 100 | 105 | 110 | |
| Lys Arg Ile Gly Ser Pro Glu Tyr Ile Lys Ser Tyr Lys Ile Ala Tyr | | | |
| 115 | 120 | 125 | |
| Ser Asn Asp Gly Lys Thr Trp Ala Met Tyr Lys Val Lys Gly Thr Asn | | | |
| 130 | 135 | 140 | |

Glu Glu Met Val Phe Arg Gly Asn Val Asp Asn Asn Thr Pro Tyr Ala
145 150 155 160

Asn Ser Phe Thr Pro Pro Ile Lys Ala Gln Tyr Val Arg Leu Tyr Pro
165 170 175

Gln Ile Cys Arg Arg His Cys Thr Leu Arg Met Glu Leu Leu Gly Cys
180 185 190

Glu Leu Ser Gly Cys Ser Glu Pro Leu Gly Met Lys Ser Gly His Ile
195 200 205

Gln Asp Tyr Gln Ile Thr Ala Ser Ser Val Phe Arg Thr Leu Asn Met
210 215 220

Asp Met
225

<210> 19
<211> 285
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (1)..(285)

<400> 19
tgt gaa gct gag cct tgc aga aat ggc gga ata tgt acc gac ctt gtt 48
Cys Glu Ala Glu Pro Cys Arg Asn Gly Gly Ile Cys Thr Asp Leu Val
1 5 10 15

gct aac tac tct tgt gaa tgc cca gga gaa ttt atg gga cga aat tgt 96
Ala Asn Tyr Ser Cys Glu Cys Pro Gly Glu Phe Met Gly Arg Asn Cys
20 25 30

caa tat aaa tgc tct ggg cca ttg gga atc gaa ggt ggg atc ata tct 144
Gln Tyr Lys Cys Ser Gly Pro Leu Gly Ile Glu Gly Ile Ile Ser
35 40 45

aat cag caa atc aca gct tca tct act cac cga gct ctt ttt gga ctc 192
Asn Gln Gln Ile Thr Ala Ser Ser Thr His Arg Ala Leu Phe Gly Leu
50 55 60

cgg aag tgg tat ccc tac tat gct cga ctt aat aag aag ggc ctt ata 240
Arg Lys Trp Tyr Pro Tyr Tyr Ala Arg Leu Asn Lys Lys Gly Leu Ile
65 70 75 80

aat gcc tgg aca gct gct gaa aat gac aga tgg cca tgg att cag 285
Asn Ala Trp Thr Ala Ala Glu Asn Asp Arg Trp Pro Trp Ile Gln
85 90 95

<210> 20

<211> 95
 <212> PRT
 <213> Mus musculus

<400> 20

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Glu | Ala | Glu | Pro | Cys | Arg | Asn | Gly | Gly | Ile | Cys | Thr | Asp | Leu | Val |
| 1 | | | | | 5 | | | | | 10 | | | | 15 | |

Ala Asn Tyr Ser Cys Glu Cys Pro Gly Glu Phe Met Gly Arg Asn Cys
 20 25 30

Gln Tyr Lys Cys Ser Gly Pro Leu Gly Ile Glu Gly Ile Ile Ser
 35 40 45

Asn Gln Gln Ile Thr Ala Ser Ser Thr His Arg Ala Leu Phe Gly Leu
 50 55 60

Arg Lys Trp Tyr Pro Tyr Tyr Ala Arg Leu Asn Lys Lys Gly Leu Ile
 65 70 75 80

Asn Ala Trp Thr Ala Ala Glu Asn Asp Arg Trp Pro Trp Ile Gln
 85 90 95

<210> 21
 <211> 396
 <212> DNA
 <213> Mus musculus

<220>
 <221> CDS
 <222> (1)..(396)

<400> 21

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| ttt | act | tgg | gaa | cca | agg | aaa | gcc | agg | ctg | gac | aag | caa | ggc | aaa | gta |
| Phe | Thr | Trp | Glu | Pro | Arg | Lys | Ala | Arg | Leu | Asp | Lys | Gln | Gly | Lys | Val |
| 1 | | | | 5 | | | | | 10 | | | | 15 | | |

aat gcc tgg act tcc ggc cat aac gac cag tca caa tgg tta cag gtt
 Asn Ala Trp Thr Ser Gly His Asn Asp Gln Ser Gln Trp Leu Gln Val
 20 25 30

gat ctt ctt gtc cct act aag gtg aca ggc atc att aca caa gga gct
 Asp Leu Leu Val Pro Thr Lys Val Thr Gly Ile Ile Thr Gln Gly Ala
 35 40 45

aaa gat ttt ggt cac gtg cag ttt gtt ggg tca tac aaa cta gct tac
 Lys Asp Phe Gly His Val Gln Phe Val Gly Ser Tyr Lys Leu Ala Tyr
 50 55 60

agc aat gat gga gaa cac tgg atg gtg cac cag gat gaa aaa cag agg
 Ser Asn Asp Gly Glu His Trp Met Val His Gln Asp Glu Lys Gln Arg
 65 70 75 80

aaa gac aag gtt ttt caa ggc aat ttt gac aat gac act cac agg aaa
 Lys Asp Lys Val Phe Gln Gly Asn Phe Asp Asn Asp Thr His Arg Lys
 85 90 95

 aat gtc atc gac cct ccc atc tat gca cga ttc ata aga atc ctt cct
 Asn Val Ile Asp Pro Pro Ile Tyr Ala Arg Phe Ile Arg Ile Leu Pro
 100 105 110

 tgg tcc tgg tat gga agg atc act ctg cgg tca gag ctg ctg ggc tgc
 Trp Ser Trp Tyr Gly Arg Ile Thr Leu Arg Ser Glu Leu Leu Gly Cys
 115 120 125

 gca gag gag gaa
 Ala Glu Glu Glu
 130

 <210> 22
 <211> 132
 <212> PRT
 <213> Mus musculus

 <400> 22

 Phe Thr Trp Glu Pro Arg Lys Ala Arg Leu Asp Lys Gln Gly Lys Val
 1 5 10 15

 Asn Ala Trp Thr Ser Gly His Asn Asp Gln Ser Gln Trp Leu Gln Val
 20 25 30

 Asp Leu Leu Val Pro Thr Lys Val Thr Gly Ile Ile Thr Gln Gly Ala
 35 40 45

 Lys Asp Phe Gly His Val Gln Phe Val Gly Ser Tyr Lys Leu Ala Tyr
 50 55 60

 Ser Asn Asp Gly Glu His Trp Met Val His Gln Asp Glu Lys Gln Arg
 65 70 75 80

 Lys Asp Lys Val Phe Gln Gly Asn Phe Asp Asn Asp Thr His Arg Lys
 85 90 95

 Asn Val Ile Asp Pro Pro Ile Tyr Ala Arg Phe Ile Arg Ile Leu Pro
 100 105 110

 Trp Ser Trp Tyr Gly Arg Ile Thr Leu Arg Ser Glu Leu Leu Gly Cys
 115 120 125

 Ala Glu Glu Glu
 130

 <210> 23

<211> 678
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(678)

| | | |
|---|--|-----|
| <400> 23 | | |
| tgc gaa gtt gag cct tgc aaa aat ggt gga ata tgt aca gat ctt gtt | | 48 |
| Cys Glu Val Glu Pro Cys Lys Asn Gly Gly Ile Cys Thr Asp Leu Val | | |
| 1 5 10 15 | | |
| gct aac tat tcc tgt gag tgc cca ggc gaa ttt atg gga aga aat tgt | | 96 |
| Ala Asn Tyr Ser Cys Glu Cys Pro Gly Glu Phe Met Gly Arg Asn Cys | | |
| 20 25 30 | | |
| caa tac aaa tgc tca ggc cca ctg gga att gaa ggt gga att ata tca | | 144 |
| Gln Tyr Lys Cys Ser Gly Pro Leu Gly Ile Glu Gly Ile Ile Ser | | |
| 35 40 45 | | |
| aac cag caa atc aca gct tcc tct act cac cga gct ctt ttt gga ctc | | 192 |
| Asn Gln Gln Ile Thr Ala Ser Ser Thr His Arg Ala Leu Phe Gly Leu | | |
| 50 55 60 | | |
| caa aaa tgg tat ccc tac tat gca cgt ctt aat aag aag ggg ctt ata | | 240 |
| Gln Lys Trp Tyr Pro Tyr Ala Arg Leu Asn Lys Lys Gly Leu Ile | | |
| 65 70 75 80 | | |
| aat gcg tgg aca gct gca gaa aat gac aga tgg ccg tgg att cag ata | | 288 |
| Asn Ala Trp Thr Ala Ala Glu Asn Asp Arg Trp Pro Trp Ile Gln Ile | | |
| 85 90 95 | | |
| aat ttg caa agg aaa atg aga gtt act ggt gtg att acc caa gga gcc | | 336 |
| Asn Leu Gln Arg Lys Met Arg Val Thr Gly Val Ile Thr Gln Gly Ala | | |
| 100 105 110 | | |
| aag agg att gga agc cca gag tat ata aaa tcc tac aaa att gcc tac | | 384 |
| Lys Arg Ile Gly Ser Pro Glu Tyr Ile Lys Ser Tyr Lys Ile Ala Tyr | | |
| 115 120 125 | | |
| agt aat gat gga aag act tgg gca atg tac aaa gtg aaa ggc acc aat | | 432 |
| Ser Asn Asp Gly Lys Thr Trp Ala Met Tyr Lys Val Lys Gly Thr Asn | | |
| 130 135 140 | | |
| gaa gac atg gtg ttt cgt gga aac att gat aac aac act cca tat gct | | 480 |
| Glu Asp Met Val Phe Arg Gly Asn Ile Asp Asn Asn Thr Pro Tyr Ala | | |
| 145 150 155 160 | | |
| aac tct ttc aca ccc ccc ata aaa gct cag tat gta aga ctc tat ccc | | 528 |
| Asn Ser Phe Thr Pro Pro Ile Lys Ala Gln Tyr Val Arg Leu Tyr Pro | | |
| 165 170 175 | | |
| caa gtt tgt cga aga cat tgc act ttg cga atg gaa ctt ctt ggc tgt | | 576 |
| Gln Val Cys Arg Arg His Cys Thr Leu Arg Met Glu Leu Leu Gly Cys | | |
| 180 185 190 | | |
| gaa ctg tcg ggt tgt tct gag cct ctg ggt atg aaa tca gga cat ata | | 624 |
| Glu Leu Ser Gly Cys Ser Glu Pro Leu Gly Met Lys Ser Gly His Ile | | |
| 195 200 205 | | |

| | | | |
|---|-----|-----|-----|
| caa gac tat cag atc act gcc tcc agc atc ttc aga acg ctc aac atg | | 672 | |
| Gln Asp Tyr Gln Ile Thr Ala Ser Ser Ile Phe Arg Thr Leu Asn Met | | | |
| 210 | 215 | 220 | |
| gac atg | | 678 | |
| Asp Met | | | |
| 225 | | | |
| <210> 24 | | | |
| <211> 226 | | | |
| <212> PRT | | | |
| <213> Homo sapiens | | | |
| <400> 24 | | | |
| Cys Glu Val Glu Pro Cys Lys Asn Gly Gly Ile Cys Thr Asp Leu Val | | | |
| 1 | 5 | 10 | 15 |
| Ala Asn Tyr Ser Cys Glu Cys Pro Gly Glu Phe Met Gly Arg Asn Cys | | | |
| 20 | 25 | 30 | |
| Gln Tyr Lys Cys Ser Gly Pro Leu Gly Ile Glu Gly Gly Ile Ile Ser | | | |
| 35 | 40 | 45 | |
| Asn Gln Gln Ile Thr Ala Ser Ser Thr His Arg Ala Leu Phe Gly Leu | | | |
| 50 | 55 | 60 | |
| Gln Lys Trp Tyr Pro Tyr Tyr Ala Arg Leu Asn Lys Lys Gly Leu Ile | | | |
| 65 | 70 | 75 | 80 |
| Asn Ala Trp Thr Ala Ala Glu Asn Asp Arg Trp Pro Trp Ile Gln Ile | | | |
| 85 | 90 | 95 | |
| Asn Leu Gln Arg Lys Met Arg Val Thr Gly Val Ile Thr Gln Gly Ala | | | |
| 100 | 105 | 110 | |
| Lys Arg Ile Gly Ser Pro Glu Tyr Ile Lys Ser Tyr Lys Ile Ala Tyr | | | |
| 115 | 120 | 125 | |
| Ser Asn Asp Gly Lys Thr Trp Ala Met Tyr Lys Val Lys Gly Thr Asn | | | |
| 130 | 135 | 140 | |
| Glu Asp Met Val Phe Arg Gly Asn Ile Asp Asn Asn Thr Pro Tyr Ala | | | |
| 145 | 150 | 155 | 160 |
| Asn Ser Phe Thr Pro Pro Ile Lys Ala Gln Tyr Val Arg Leu Tyr Pro | | | |
| 165 | 170 | 175 | |

Gln Val Cys Arg Arg His Cys Thr Leu Arg Met Glu Leu Leu Gly Cys
180 185 190

Glu Leu Ser Gly Cys Ser Glu Pro Leu Gly Met Lys Ser Gly His Ile
195 200 205

Gln Asp Tyr Gln Ile Thr Ala Ser Ser Ile Phe Arg Thr Leu Asn Met
210 215 220

Asp Met
225

<210> 25
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> synthetic DNA

<400> 25 aaagatctaa cccgaacccc tgtgaa 26

<210> 26
<211> 24
<212> DNA
<213> Artificial sequence

<220>
<223> synthetic DNA

<400> 26 aactcgagca tttgtggatg tgcg 24